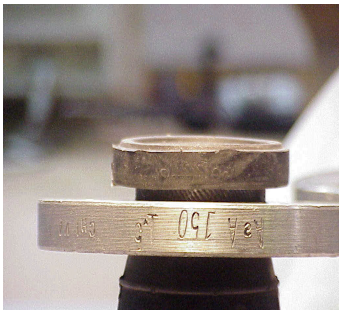
# Suspect/Counterfeit Items Awareness Training

**U.S. Department of Energy**
**Environment, Safety & Health**
**Office of Corporate Performance Assessment**

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## Suspect/Counterfeit Items Training

## Sponsored by the Office of Corporate Performance Assessment (EH-3)

## DOE – EH Points of Contact

**Frank B. Russo**
Deputy Assistant Secretary For Corporate Performance Assessment (EH-3)
Germantown, MD 20874
Frank.Russo@hg.doe.gov
301-903-8008

Frank E. Tooper
Director, Office of Analytical Studies (EH-32)
Washington, D.C. 20585
Frank.Tooper@eh.doe.gov
202-586-1772

Richard S. Green
Office of Analytical Studies (EH-32)
Germantown, MD 20874
Rick.Green@hq.doe.gov
301-903-7709

## Subject Matter Expert & Instructor

Roger Moerman
Technical Service Associates
2535 W. 34$^{Th}$ Place
Kennewick, WA 99337
(509)585-7042
rdm2535@aol.com

Copies of this booklet may be downloaded from the DOE EH-32 Suspect/Counterfeit-Defective Items website http://www.eh.doe.gov/paa/sci along with other S/CI information.

## Disclaimer

This training manual provides information on individual components identified as suspect or counterfeit. Without additional information, the manufacturers or suppliers identified should not be considered as to have engaged in any wrongdoing. It is not necessarily a negative reflection on a supplier or manufacturer if their products are reported as Suspect/Counterfeit Items (S/CIs). Reputable manufacturers and suppliers have a vital interest in preventing the manufacture and distribution of S/CIs associated with their names. The supplier or manufacturer may have been victimized and is pursuing S/CIs associated with its products in an aggressive, prudent and professional manner to get these items off the market. Therefore, each particular case must be examined on its own merit without making premature conclusions about the fault or culpability of the manufacturer or supplier whose name is associated with the S/CI.

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## Acknowledgment

This training manual was developed by Roger Moerman, Technical Services Associates, with input from the Office of Corporate Performance Assessment, DOE EH-3.

## Table of Contents

# 1.0 INTRODUCTION

During the last 20 years, the industry has become aware of a massive influx of counterfeit bolts in the American market. Counterfeiting is a problem present not only in fasteners, but also in numerous other nuclear and non-nuclear components as well. The automobile industry has witnessed similar problems with bogus parts, and the aviation industry is struggling with an increasing influx of unapproved parts and assemblies.

Some manufacturers and suppliers use inferior materials and processes to manufacture substandard items whose properties can significantly vary from established standards and specifications. Substandard materials known as suspect/counterfeit items (S/CIs) pose immediate and potential threats to the safety of DOE and contractor workers, the public and the environment. Failure of a safety system due to an S/CI could also have security implication at the DOE facilities.

In most cases, fraud is the cause of the problem. Companies or persons, who misrepresent material, provide materials that do not meet consensus standards, or alter markings to make materials appear to meet consensus standards are in fact defrauding the government, industry and the public. Unfortunately, this problem continues to increase despite measures to detect and eliminate counterfeit, bogus, or unapproved items. In 1994, counterfeiting was estimated to be a $20 billion business in the United States. By 2000, it had expanded to a $200 billion business ($1 trillion globally).

Identified counterfeit, bogus, or unapproved materials (and any other term an industry may use for these items) include electrical breakers and switches, bolts, tube steel, flanges, lifting slings, and brake pads and linings. Commercial nuclear and private industries, as well as government and public, are not safe from these parts and materials. Their presence is pervasive and the consequences are real; tragedies have occurred as the result of materials that did not meet required design specifications.

Surveys and studies have been performed by various industries in an attempt to understand this problem. The reports clearly identify the current problems and generally recommend that training programs be developed to allow procurement, engineering, operations, maintenance, and inspection personnel to identify and eliminate substandard parts and materials. The reports recognize the removal of these parts and materials as only the first step in the process. A system of prevention, established when all organizations are fully aware of the issues, must be implemented from the top down. Line management must understand and endorse preventive measures. Only when the designer (who specifies and item), the buyer (who procures the item), the receiving inspector (who examines the item), the end user (who installs and operates the item), and the supplier (who supplies the item) work together to control this problem will we begin to see positive results. This requires all parties to communicate with each other to identify and resolve problems.

This problem is not new; counterfeiting, copyright and trademark infringements, and out-and-out fraud have been occurring in this country since regulations were first established. Unfortunately, a high percentage of these activities originate form foreign sources, sometimes to the knowledge

of U.S. importers. Allowing these unscrupulous business activities to take place is unacceptable. Detection of counterfeit, bogus, or unapproved products is possible, but identifying these items is every ones responsibility with the assistance of qualified personnel to aid in making the final determination.

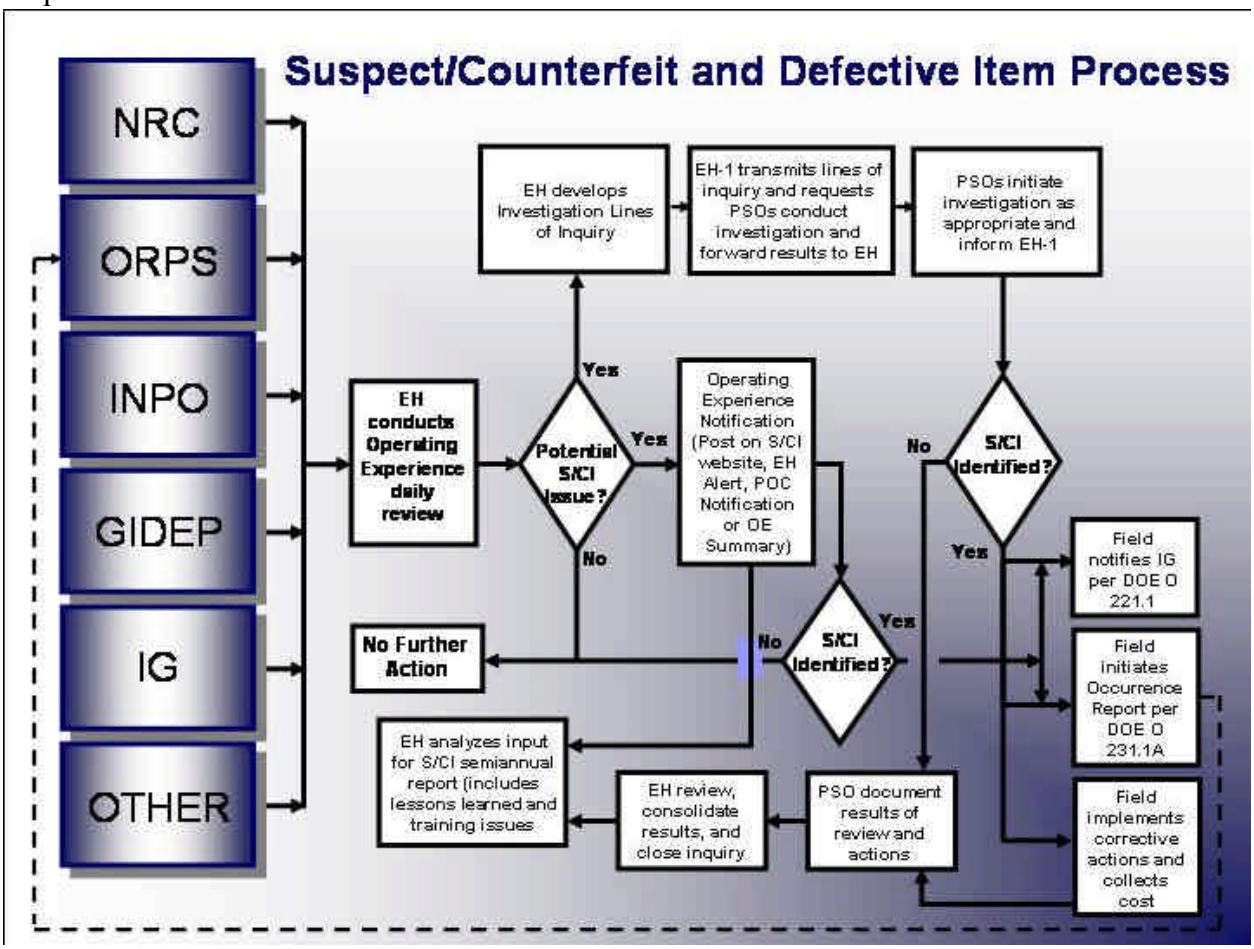
Examples of locations in which installed S/CIs have been discovered include:

- Cranes, elevators, and fork lifts: critical load paths;
- Vehicles: engines, brakes, or steering mechanisms;
- Aircraft: engines and attachments, wings, tails, and landing gear;
- Facilities: valves, compressors, and vessels used to contain radioactive fluids, high-temperature or high-pressure steam or fluids, or other hazardous material or safety systems supporting safe operation or shutdown of a facility or process.

## 2.0 DOE S/CI PROCESS

The Office of Environment, Safety and Health (EH) has taken a corporate leadership role and is accountable for ensuring the effective implementation of the Department's S/CI process. This activity was formerly performed by the Department complex-wide Quality Assurance Working Group

Below is a graphic depiction of the S/CI Process DOE has developed to aid in identifying suspect/counterfeit and defective items.




The S/CI process flow chart is included in the Office of the Environment, Safety and Health Process Guide for the Identification and Disposition of Suspect/Counterfeit Items at Department of Energy Facilities. The detailed Process Guide can be found at http://www.eh.doe.gov/paa/sci/officeguide.html on the Office of Corporate Performance Assessment Suspect/Counterfeit-Defective Items website (http://www.eh.doe.gov/paa/) that includes S/CI related information and links to other related websites.

## 3.0 DOE DIRECTIVES AND GIDEP

Current and draft directives and accompanying guidance relevant to S/CI can be found at **http://www.directives.doe.gov/.** Also see Appendix D – References.

**Government-Industry Data Exchange Program (GIDEP)**

The GIDEP (Government-Industry Data Exchange Program) is a cooperative activity between Government and Industry participants seeking to reduce or eliminate expenditures of time and money by making maximum use of existing knowledge. The program provides a means to exchange certain types of technical data essential in the research, design, development, production and operational phases of the life cycle of systems and equipment. DOE participates in GIDEP and is directed by Office of Management and Budget (OMB ) letter 91-3 to report S/CI related events to GIDEP for posting on their website found at http://www.gidep.org/. OMB letter 91-3 can be found at http://www.eh.doe.gov/paa/sci/ on the Office of Corporate Performance Assessment website in the References area.

## 4.0 DOE EH S/CI WEBSITE INFORMATION

The Office of Corporate Performance Assessment has developed, implemented, and maintains a website for relevant S/CI and defective item information and related reference documents at http://www.eh.doe.gov/paa/sci.

## 5.0 FASTENERS

Since the 18th century, valuable information on fastener design, testing, manufacture, and service has been developed in such countries as the United States, United Kingdom, Germany, Holland, Austria, Japan, France, Belgium, Switzerland, and Italy. The time interval between the Second World War and the close of the 1960s has been termed the "golden era" of fastener development.

Although counterfeit fasteners were first detected in the U.S. in early 1985, it is a common belief that manufacturing began in 1979-80 when the second major escalation of oil prices occurred. Japan is very sensitive to energy (oil) costs and saw a chance to reduce energy consumption by using low-carbon, boron steel in bolt making,

About half a century of progress in developing fastener standards in the U.S. has been centered around the procedures of the American National Standards Institute, Inc., (ANSI) and the Industrial Fasteners Institute (IFI). The design engineers and managers of manufacturing and construction industries have consulted ANSI and IFI standards covering dimensions, geometry, and practice for a great number of mechanical fasteners. Further detailed information is also available from engineering and production handbooks and other governing agencies that have produced nationally recognized fastener standards, including the American Society of Testing Materials (ASTM), the American Society of Mechanical Engineers (ASME), and the Society of Automotive Engineers (SAE).

Note: The Dingell Report (U.S. House Subcommittee Report of July, 1988) indicates that the problem may have started as early as 1974, but nothing is provided to substantiate the allegation.

### 4.1 Counterfeit Examples

Below are some comparisons of some standard bolts that have been identified as being counterfeit items that are marked exactly the same as ASTM bolts.

- ASTM A449, Type I
- SAEJ429, Grade 5

Head marks on ASTM 449, Type 1 are identical to those on SAE J429, Grade 5. Grade 5 or 5.2 bolts that do not meet specifications due to improper heat treatment could result in bolt failure-usually a brittle failure from excessive hardness.

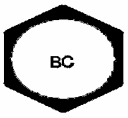
- ASTM A354, Grade BD
- SAE J429, Grade 8

Head marks on A354; Grade BD is identical to SAE J429 Grade 8. Grade 8.2 bolts relax when subjected to temperatures greater than 500 degrees F as a result of chemistry and heat treatment methods, which differ from Grade 8.

The Industrial Fasteners Institute (IFI) has data to show that bolts sold and marked, as Grade 8 may not even meet Grade 8.2 requirements. Manufacturers may not have had adequate controls on the heat treatment process which can result in bolts being too hard-high ultimate tensile strength (UTS), but brittle. The Grade 8 bolts may fail in high stress applications at normal temperatures.

For additional information on bolt head markings based on the grade of the fastener, see Appendix III to ANSI B18.2.1. Copy of Appendix III is shown on the next page.

ANSI B18.2.1, Appendix III ASTM & SAE Grade Marking for Steel-Bolts and Screws

| Grade Marking | Specification | Material |
|---|---|---|
|  No Mark | SAE - Grade 1 | Low or medium carbon steel |
| | ASTM - A307 | Low carbon steel |
| | SAE - Grade 2 | Low or medium carbon steel |
|  | SAE - Grade 5 | Medium carbon steel, Quenched and tempered |
| | ASTM - A 449 | |
|  | SAE - Grade 5.2 | Low carbon martensite steel, Quenched and tempered |
|   | ASTM - A 325 Type 1 | Medium carbon steel, Quenched and tempered Radial dashes optional |
|   | ASTM - A 325 Type 2 | Low carbon martensite steel, Quenched and tempered |
|   | ASTM - A 325 Type 3 | Atmospheric corrosion (weathering) steel, Quenched and tempered |
|   | ASTM - A 354 Grade BC | Alloy steel, Quenched and tempered |
|  | SAE-Grade 7 | Medium carbon alloy steel, Quenched and tempered Roll threaded after heat treatment |
|  | SAE-Grade 8 | Medium carbon alloy steel, Quenched and tempered |
| | ASTM - A 354 Grade BD | Alloy steel, Quenched and tempered |
|  | SAE - Grade 8.2 | Low carbon martensite steel, Quenched and tempered |
|   | ASTM - A 490 Type 1 | Alloy steel, Quenched and tempered |
|   | ASTM - A 490 Type 3 | Atmospheric corrosion (weathering) steel, Quenched and tempered |

## 4.2 Identification

Fasteners are not the only parts that are subject to counterfeiting. The list of components that have been identified to have been misrepresented, altered, counterfeited, used sold as new is growing every year. The best way to inform people of the problems is to provide a broad base of information from as many sources as possible for their review.

This section is a compilation of information from a number of sources such as the Department Of Energy, the National Board of Boiler and Pressure Vessel inspectors, and the Nuclear Regulatory Commission bulletins. The information covers material from a head mark list (next page) derived from customs investigations, to components and products that may be vulnerable to counterfeiting, to counterfeit detection traits, documentation detection traits, and contributing causes for receipt of these type materials.

In 1990 Public Law 101-592, 101st Congress "Fastener Quality Act" (FQA) was enacted. The Act is intended "To require that certain fasteners sold in commerce conform to the specifications to which they are represented to be manufactured, to provide for accreditation of laboratories engaged in fastener testing, to require inspection, testing, and certification, in accordance with standardized methods, of fasteners used in critical applications to increase fastener quality and reduce the danger of fastener failure and for other purposes."

## 4.3 Major Amendments

The FQA has been amended several times since 1990; the major amendments are summarized below. According to the National Institute of Standards and Technology (NIST), U.S. Department of Commerce, the FQA signed by President Clinton on June 8, 1999 is "more focused and less burdensome." The amendments include:

- Eliminated Requirements: The amended law no longer requires NIST to approve organizations that accredit fastener testing laboratories.

- Covered Fasteners and Quality Assurance Systems: Fasteners covered under the FQA are defined as limited to bolts, nuts, screws and studs (having a nominal diameter of 6 miilimeters/0.25 inch or greater), or direct tension-indicating washers that are through-hardened) or meet a consensus standard that calls for through-hardening) and manufactured to standards and specification of consensus-standards organizations or government agencies that require a grade mark.

  Many fasteners are exempt from coverage, including those that are:

  1. Part of an assembly
  2. Ordered for use as a spare, substitute, service, or replacement part, unless that part is in a package containing more than 75 of any such part at the time of sale or is contained in an assembly kit
  3. Produced and marked as ASTM-A 307 Grade A
  4. Produced in accordance with the ASTM-F 432 standard

5. Specifically manufactured for an aircraft if the quality is approved by the Federal Aviation Administration or by a foreign airworthiness authority
6. Manufactured in accordance with International Organization for Standardization (ISO) 9000, 9001, 9002, or TS16949; Quality System (QS) 9000; or other fastener quality assurance system defined by the law, or
7. Manufactured to a proprietary standard.

To encourage the use of quality management systems such as QS 9000, fasteners are exempt from the FQA if they are manufactured in a facility using such a system.

If an accreditation organization chooses not to follow ISO guidelines for registration and accreditation, they may submit documents to the NIST director that establish their own guidance/requirements for (1) accredited bodies to register manufacturing systems as meeting FQA quality assurance requirements, (2) accreditation of testing laboratories, and (3) approval of accreditation bodies to accredit testing labs.

- Reduced Paperwork: To reduce paperwork record-keeping burdens, companies are allowed to transmit and store electronically all records on fastener quality provided there are reasonable means of authentication of the source of the document and reasonable protection against alteration. The record required for a covered fastener will be the record of conformance that identifies the fastener by description, lot number, and the manufacturer, and includes other information defined by the law.

- Hotline (1-800-424-2980): To combat the manufacture, sales, or distribution of fasteners that are fraudulent under the FQA, the Commerce Department has established and maintains a hotline for reporting alleged violations of the laws. All credible allegations are forwarded to the Attorney General.

NIST maintains an FQA Web site (www.nist.gov/fqa) that includes the text of the amended FQA and the text of a February 1999 Commerce Department study of the law. The site also contains procedures for implementing the FQA, a list of self-declared accreditation bodies, lists of accredited laboratories, and the fastener insignia register and recordal of the U.S. Patent and Trademark Office.

The Suspect/Counterfeit Headmark List is shown on the following page. All headmarks on this list are to be considered suspect/counterfeit and require no further testing.

**The S/CI Headmark List is still relevant and bolts received need to be compared to the list.** ***One example that brings this message home occurred in April, 2003. Lawrence Livermore National Laboratory received a shipment of bolts in from their approved bolt supplier. A random check of the bolts discovered a number of "KS" headmark bolts mixed in with other good bolts. The irony of this situation is that Kosaka Kogyo, manufacturer of "KS" bolts went out of business over 10 years earlier.***

# SUSPECT/COUNTERFEIT HEADMARK LIST

## Headmark List

### All Grade 5 and Grade 8 Fasteners of Foreign Origin Which Do Not Bear Any Manufacturers' Headmarks:

 Grade 5  Grade 8

### Grade 5 Fasteners with the Following Manufacturers' Headmarks:

| MARK | MANUFACTURER | MARK | MANUFACTURER |
|---|---|---|---|
|  J | Jinn Her (TW) |  KS | Kosaka Kogyo (JP) |

### Grade 8 Fasteners with the Following Manufacturers' Headmarks:

| MARK | MANUFACTURER | MARK | MANUFACTURER |
|---|---|---|---|
|  A | Asahi Mfg (JP) |  KS | Kosaka Kogyo (JP) |
|  NF | Nippon Fasteners (JP) |  RT | Takai Ltd (JP) |
|  H | Hinomoto Metal (JP) |  FM | Fastener Co of Japan (JP) |
|  M | Minamida Sieybo (JP) |  KY | Kyoei Mfg (JP) |
|  MS | Minato Kogyo (JP) |  J | Jinn Her (TW) |
|  Hollow Triangle | Infasco (CA TW JP YU) (Greater than 1/2 inch dia) | | |
|  E | Daiei (JP) |  UNY | Unytite (JP) |

### Grade 8.2 Fasteners with the Following Manufacturers' Headmarks:

| MARK | MANUFACTURER |
|---|---|
|  KS | Kosaka Kogyo (JP) |

### Grade A325 Fasteners (Bennet Denver Target Only) with the Following Headmarks:

| | MARK | MANUFACTURER |
|---|---|---|
| Type 1 |  A325 KS | Kosaka Kogyo (JP) |
| Type 2 |  | |
| Type 3 |  | |

**Stainless Steel Fasteners**

In November 1993 the Industrial Fastener Institute (IFI) issued a Fastener Advisory regarding 18-8 stainless steel bolts. The advisory warned about a "bait and switch" tactic in which a distributor takes an 18-8 bolt (indicated by two radial lines 90 degrees apart), but no manufacturer's marking, and sells them as ASTM A320 Grade B8 bolts after hand-stamping B8 on the heads.

As a result of this IFI Advisory, DOE sites conducted a search of facility stores for stainless steel fasteners with hand-stamped B8 grade marks. Hundreds of stainless steel bolts with hand stamped B8 grade markings, along with a variety of other raised and depressed head and manufacturer's markings were identified in facility stores throughout the DOE complex.

An inspection of shop stock at a Hanford Site facility revealed bolts with three different raised grade marking, 18-8, 304, and F593C, along with raised manufacturers' identifications of DK, H, HP, C, SO, CS, PMC, TH, THE, and a STAR. The majority of the remaining samples found at Hanford exhibited raised grade markings of 18-8 and 304, with a B8 grade marking and manufacturer's identification hand-stamped into the head of the bolt.

Finally, a few samples did not display any manufacturer's markings. Most of the bolts discovered were purchased with the specification to meet a national consensus standard, American Society for Testing and Materials (ASTM) A193, B8 Class 1 rather than the ASTM A320 standard discussed in the IFI warning.

The Savannah River Site also conducted a site-wide search of facility stores with similar results. A total of 159 stainless steel fasteners with hand-stamped B8 grade marks and raised or hand-stamped manufacturer's symbols were found. Fifteen stainless steel fasteners that had no manufacturer's symbol were also found.

The requirements of the ASTM A193 standard regarding fastener marking and certification are very similar to those required by the ASTM A320 standard discussed in the IFI Advisory. The ASTM A193 standard requires that grade and manufacturer's identification symbols be applied to the heads of bolts that are larger than ¼" in diameter. The standard, however, does not specifically differentiate between raised and depressed head markings, but states only that "for the purposes of identification marking, the manufacturer is considered the organization that certifies that the fastener was manufactured, sampled, tested, inspected in accordance with this specification." In other words, the standard allows for some of the required marking to be formed into the head of the bolt (either raised or lowered) during manufacturing, and the rest to be applied later on via hand-stamping.

Since ASTM A193 does not differentiate between raised and depressed marking, these fasteners can be counterfeited in the same way as the ASTM A320 fasteners discussed in the November 1993 IFI warning. For example, distributors can procure 19-8 stainless steel bolts that were manufactured by anonymous party, and without conducting the necessary upgrading process or certification testing, a second party could hand-stamp B8 and a manufacturer's marking into the

heads to indicate that the fasteners exhibit the mechanical and chemical properties required of ASTM A193 Grade B8 Class 1.

A listing of suspect stainless steel fastener head marks is shown on the next page.

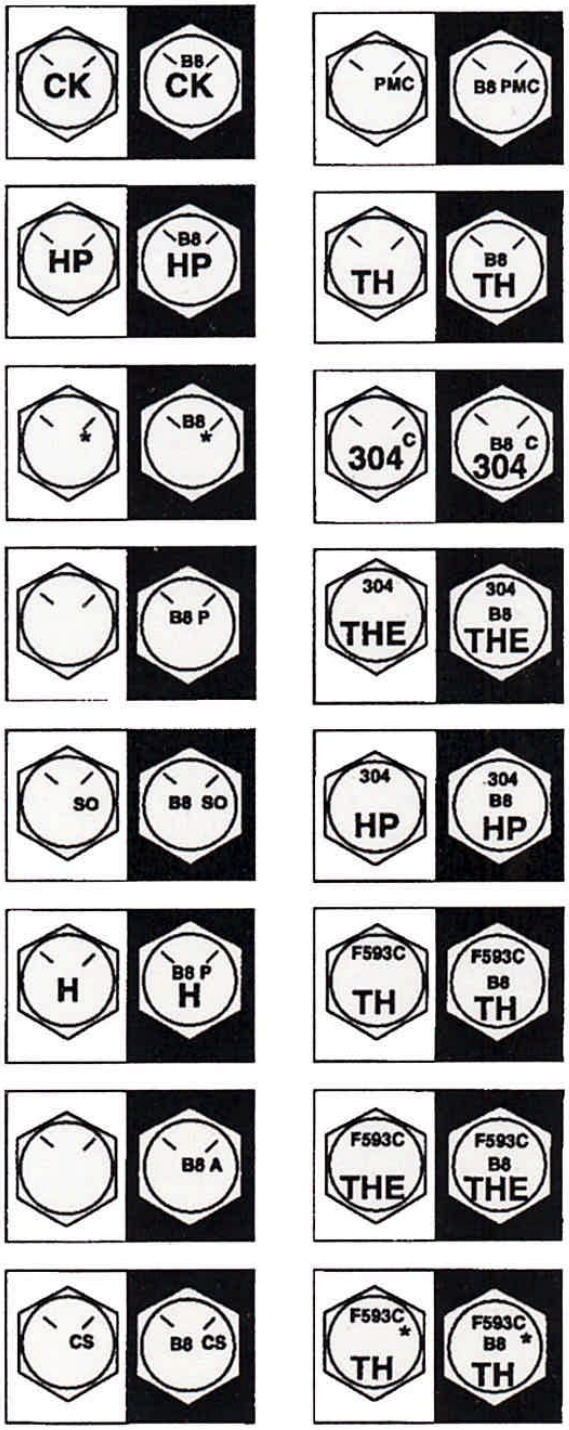
***For all practical applications the best rule of thumb is as follows "when a bolt is discovered with dual head mark stamping (both raised and depressed) the bolt should be considered suspect. Following the definitions of suspect this would then require that an investigation take place to ensure the bolt meets the requirements and is not counterfeit. If the item is found to be counterfeit, the item should be processed in accordance with DOE requirements and the contractor S/CI program.***

## SUSPECT STAINLESS STEEL FASTENER HEADMARK LIST

**Examples of stainless steel fasteners that have been upgraded from 18-8 to ASTM A320 or ASTM A193 Grade B8 after hand stamping. The last three examples show samples of fasteners to indicate conformance to two non-compatible standards, ASTM A193 and ASTM F 593C.**

**Any bolt on this list should be treated as defective without further testing and process in accordance with HNF-PRO-301. Note: This list was originally Published by DOE /EH-0196, Issue No. 97-6**

**If any of these fasteners are located, contact your facility S/CI Point of Contact (POC) for instructions. The POC list is on the Hanford Intranet at: http://docs.ri.gov/han.info/hianscl/hianscl.doc. Scroll to the end of the document for the list.**

## 6.0 DEFINITIONS

**Certified Material Test Report.** A written and signed document that is approved by a qualified party and contains data and information that attests to the actual properties of an item and contains data and information that attests to the actual properties of an item and the actual results of all required tests.

**Counterfeit Items.** A counterfeit item is a suspect item that is a copy or substitute without legal right or authority to do so or one whose material, performance, or characteristics are knowingly misrepresented by the vendor, supplier, distributor, or manufacturer. An item that does not conform to established requirements is not normally considered an S/CI if the nonconformity results from one or more of the following conditions, which should be controlled by site procedures as nonconforming items: defects resulting from inadequate design or production quality control; damage during shipping, handling, or storage; improper installation; deterioration during service; degradation during removal; failure resulting from aging or misapplication; or other controllable causes. (Reference: DOE G 440.1-6, *Implementation Guide for use with Suspect/Counterfeit Items Requirements of DOE O 440.1,* Worker Protection Management; 10 CFR 830.120; and DOE O 414.1A, *Quality Assurance*

**Critical Load Path.** A structural component (e.g., a bolt) in a crane, hoist, transporter, or other handling or lifting equipment that bears the load being lifted or moved, and whose failure could result in an operation safety problem or an unacceptable risk of injury to workers or the public.

**Defective Items.** A defective item or material is any item or material that does not meet the commercial standard or procurement requirements as defined by catalogues, proposals, procurement specifications, design specifications, testing requirements, contracts, or the like. It does not include parts or services that fail or are otherwise found to be inadequate because of random failures or errors within the accepted reliability level (Reference: DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*, August 2003).

Manufacturers generally notify their customers when defective items are identified through such mechanisms as recall notices. Such notices may be directly sent to customers, or may appear in Federal agency or industry

**Nonconformance.** A deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate.

**Suspect Items.** A suspect item is one in which there is an indication by visual inspection, testing, or other information that it may not conform to established Government- or industry-accepted specifications or national consensus standards (Reference: DOE G 440.1-6, *Implementation Guide for use with Suspect/Counterfeit Items Requirements of DOE O 440.1,* Worker Protection Management; 10 CFR 830.120; and DOE 414.1A, *Quality Assurance,* July 2001).
Suspect items must be further investigated to determine whether they are counterfeit. When an item contains indications, but insufficient evidence, of irregularities such as noncompliance with agreed-upon specifications in the manufacturing process, it may be declared suspect.

# APPENDIX A

## COMPONENTS AND PRODUCT INFORMATION

**Components and Products Vulnerable To Misrepresentation**

- Moderate or low cost items with high turnover usage rate
- May be widely used in non-critical and critical applications
- Easily copied by secondary market suppliers
- Often by-passing the supplier, and drop shipped to the customer
- Substantially lower priced than market value or competitors pricing

The following is a reproduction of United States NRC, Office of Nuclear Reactor Regulation, Attachment 3, IN 898-70, Supplement 1, April 26, 1990:

**Note:** Updated information appears in ***bold and italics***

1. **General Items**
   - Spare/replacement kits from vendors other than the Original Equipment Manufacture
   - Elastomer – "O" rings, seals
   - Lubricants
   - Adhesives
   - Electrical connectors
   - ***Metal Framing components (i.e. flat plate fittings, post bases, beam clamps, channel)***
   - ***Flanges***

**Electrical Items**

- Motor control centersComplete units
- Components
- Starters
- Starting coils
- Contactors
- Contractor kits
- Overload relays
- Starter control relays
- Overload heaters
- Protective/control relays
- DC power supplies/chargers
- AC inverters
- Current/potential transformers
- Exciters/regulators
- Bus transfers/auto bus transfers
- Motor generators sets

- Generators
- Rewindable motors
- Printed circuit boards
- Fuses
- Splices Vacuum breakers (BWR)
- Indicators/controllers
- Panel lights/switches
- Transmitters/instrument switches
- Isolation devices

**3. Mechanical Items**

- Welding Materials
- Rod
- Wire
- Flux
- Small piping products
- Small structural members (pip supports)
- Spent fuel pool cooling pumps and similar pumps
- Ultimate heat sink supply manual valves and similar valves
- ***Valves***

**4. Diesel Generator Items**

- Diesel speed governors
- Diesel fuel transfer pumps
- Diesel injection pumps

**5. Lifting Materials**

- Slings
- ***Hooks***
- ***Cables***
- ***Shackles***

# APPENDIX B

## Suspect Indications List

The table is reproduced here and has been updated with information through June 2000. The authors have also added additional information through December 2003. Added information appears in italics for clarity.

**Note:** Updated information appears in ***bold and italics***

Components with the following indications are considered suspect:

### I. PIPING AND PIPING COMPONENTS (INCLUDING MECHANICAL AND METAL PRODUCTS)

#### A. General Indications

- Used component appearance
- Unusual or inadequate packaging
- Foreign newspapers used as packaging
- Scratches on component outer surface
- Evidence of tampering
- Components with no markings
- Pitting or corrosion
- External weld or heat indications
- Questionable or meaningless numbers
- Typed labels
- Evidence of hand-made parts
- Painted stainless steel
- Ferrous metals that are clean and bright
- Excess wire brushing or painting
- Ground off casting marks with stamped marks in the vicinity
- Ground off logo mark
- Sings of weld repairs
- Threads showing evidence of wear or dressing
- Inconsistency between labels
- Old or worn nameplates
- Nameplates that look newer than the component
- Missing manufacturers standard markings and logos
- Overlapping stamps
- Different colors of the same part
- Traces of Prussian Blue
- No specification number
- No size designation

- Missing pressure class rating
- Other missing designations per the specification
- Evidence of re-stamping
- Deficient welds on chemical/nuclear shipping casks
- Thinner than expected
- Parts identified as "China" only, **or "*Korea", "Mexico", "Thailand", "India"***
- ***Excess certification logo's (i.e. "UL", "FM", "CGA". "AGA" all on one valve body – Not normal, usually will have one or two logo's plus ANSI or ASME***

**B. General Valve Indications:**

- Wrench marks on valve packing glands, nuts, and bolts
- Nameplates attached with screws rather than rivets
- Poor fit between assembled valve parts
- Dirty internals
- Scratched or marred fasteners or packing glands
- Gate valve: gate off-center when viewed through open end
- Fresh sand-blasted appearance of valve bodies, eye bolts fittings, stems
- Loose or missing fasteners
- Different types of had wheels on valves of the same manufacturer
- Some parts (e.g., hand wheels) look newer than rest of the valve
- Improper materials (e.g., bronze nut on a stainless stem)
- Post-manufacturing alteration to identification/rating markings
- Indication of Previous Joint Welding
- ***Excessive standards markings (e.g.* UL, FM, CGA, AGA*) (may need to check with manufacture literature for what standards they use.)***
- ***Valves will not open or close, even when wrench applied.***
- ***Substandard valves mixed in with standard valves (substitution)***

**C. Specific Valve Indication**: Valves produced by the following manufacturers generally have the following features and are considered suspect if they are missing these features.

**Crane Valves:**

- Body cast or forged markings:
- Crane name
- Pressure rating
- Pattern number
- Nameplate Information:
  - Made from stainless steel (silver color) with black lettering
  - Attached by drive screws OR attached on valve stem underneath handle. Valve size pressure class, operating pressure at temperature
  - Body material
- Seat material on valve body and valve seat
- Stem trim material and heat treat conditions

- Certification data Military specification, if applicable
- Drawing number Shop Order Number (SO#)
- Body cast or forged markings including the name “Crane”
- Valve class
- Valve size
- Grade of steel
- Melt number

**Powell Valves (Wm. Powell Co.):**

- Body cast or forged markings including the name “Powell”
- Valve class
- Valve size
- Grade of steel
- Melt number
- Nameplate Information:
  - Riveted to valve body OR attached to valve stem underneath handle
  - Attached with single end welded wire (small valves)
  - Serial number
  - Valve size
  - Figure number
  - Body style
  - Valve stem, disc, and seat type
  - Strength at temperature
  - Strength at 100F
  - The WM. Powell Co. Cin., Oh. Made in U. S. A.

**Vogt, Henry Machine Co., Inc.:**

- Body cast or forged markings:
  - The name “Vogt”
  - Pressure rating
  - Pattern number
  - Size
  - Material specification
  - Two code ID – 3 – letter code and a 4-digit code
- Nameplate Information
  - Made from aluminum with electro-chemical etched lettering
  - Attached on valve stem underneath handle
  - Valve size
  - Pressure class, operating pressure at temperature
  - Body material
  - Internal seat material or internal H.F.
  - Stem trim material
  - Specification number Drawing Number
  - Pressure rating

**Walworth Valves:**

- Body Cast or forged markings
  - The name "Walworth"
  - Pressure class
  - Size
  - Heat code
  - Serial number (stamped)
- Nameplate information
  - Made from aluminum
  - Attached by drive screws
  - Attached to cover at times
  - Valve size
  - Pressure class and operating pressure at temperature'
  - Body material
  - Internal seat material or H.F.
  - Stem trim material and heat treat conditions
  - Figure number
  - Serial number
  - Location of Manufacture
  - Item code number

**Masoneilian—Dresser Valves:**

- Masoneilian or Worthington Controls stamped on nameplate
- MD or Masoneilian on valve body

## II. ELECTRICAL COMPONENTS

### A. General Indications:

- Screwdriver marks on terminals
- Different screw types or materials on terminals
- Handwritten or typed rather than stamped tags
- Missing tags (usually UL approval tag)
- Pitted or worn contacts and lugs
- Not in manufacturer's box or container
- Signs of paint or smoke
- Insufficient nameplate information
- Missing terminals
- Screws used in place of rivets
- Body worn or discolored
- Rough metal edges
- Scratched or marred surfaces
- Metal color inconsistencies
- Modified or re-stamped nameplates

- Improper fastening of nameplates
- Plastic parts of different colors
- Discolored or faded manufacturer's labels
- Past due calibration stickers (internal and external)
- Broken or damaged solder terminations
- Broken or damaged termination lugs
- Contact surfaces that do not mate properly
- Lubrication that appears to be old
- Shipping in plain packaging (no manufacturer bar code)
- ***Used or damaged parts in new packaging***

**B. Specific Indications:**

**Molded Case Circuit Breakers:**

- Handle modified to change ampere rating
- Style is no longer manufactured
- Unusual packaging: bulk packaging, generic packages, and cheap appearance
- Refurbisher's name on breaker
- Broken seal between halves
- Contradicting amperage ratings

**Fuses:**

- Label missing or weathered
- Wear marks on bases

**Power (Draw out) Circuit Breakers:**

- Different color or shape of over current devices
- Suspicious-looking auxiliary trip devices

**Motor Starters:**

- Poor fitting or wrong voltage rated operating coil

**Motor Control Centers:**

- Breakers that are not easily opened or closed with compartment door closed
- Exposed buss work with compartment doors open

**Electro-mechanical Relays:**

- Poor or loose fitting relays

**Potter-Brumfield Relay:**

- Sloppy coil lead solder joints
- Painted relay base grommets (normally clean)
- Terminal strips fastened with eyelets
- Painted rivets fastening the terminal strip to the relay housing
- Termination screws in brown paper bags (should be in clear, heat sealed plastic bags)
- Use of bubble wrap (plastic with Styrofoam should be used)
- Repainted inner bell surface
- Missing or inconsistent date codes, inspection stamp, and test stamp
- Incorrect shaft relay cover clearance, shaft play, and lack of bearing lubricant
- Tops of rotor shafts painted a color other than black
- Non-uniform numbers stamped on the contact decks, indicating decks made up from various relays
- Incorrect coil (i.e., 125 VDC relay with 200 VDC coil)

**Capacitors:**

- Polished surfaces scratched or dented
- Termination lugs scarred
- Buildup of debris and dirt in termination guards
- Plain packaging (no manufacturer bar codes)

## III. FASTENERS

### A. General Indications:

- No manufacturer's or grade mark (unless certified to a specification not requiring marking)
- Evidence of machining marks
- Poor thread form, evidence of wear, or dressing
- Head marks shown on the Suspect Fastener Head Mark List
- Foreign manufacturer not meeting Public Law 101-592
- No markings for nuts or washers packaged with labels indicating that they were manufactured to a code or MIL-SPEC which requires marking
- Head markings are marred, missing, or appear to have been altered
- Head markings are inconsistent with a hear/lot
- Double stamping
- Metric and SAE Stamping
- ***Head marks with raised marks and depressed marks on same bolt (not normal manufacturing process)***

## IV. DOCUMENTATION AND CERTIFICATION:

### A. General Indications:

- Use of correction fluid or correction tape
- Type style or pitch change is evident
- Documentation has missing (or illegible) signature, initial, or data
- Document is excessively faced or unclear
- Inconsistent technical data
- Certification or test results are identical between items when normal variations should be expected
- Document is not traceable to the items procured
- Technical data are inconsistent with code or standard requirements
- Documentation is not delivered as required on the purchase order, or in an unusual format
- Lines on forms are bent, broken, or interrupted indicating that data have been deleted or exchanged by "cut and paste"
- Handwritten entries are on the same document where typed or pre-printed data exist
- Data on a single line are located at different heights
- Product recall
- ***Chemical alloy composition totals 100% (or >99.75%) as shown on Certified Material Test Report (CMTR)***
- ***Heat and lot numbers are same for different materials in same order (i.e. 6010 and 7018 weld wire can not be manufactured from same heat and lot of material.)***

## V. STAINLESS STEEL WIRE ROPE:

### A. General Indications:

- No or incomplete documentation
- ***Noticeable alteration of documentation (refer to Documentation and Certification section)***

## *VI.* LIFTING MATERIALS

### *A. General Indications:*

- ***Original markings ground off and re-stamped***
- ***Altered markings on identification tags***
- ***Used appearance of items (i.e. straps appear worn, or hook have indications of previous use)***
- ***Parts identified as "China" only,* or *"Korea", "Mexico", "Thailand", "India***

- ***No or incomplete documentation (refer to Documentation and Certification Section)***
- ***Red hooks not labeled with Crosby Group markings ("Crosby" or "CG") Crosby has "The Crosby Red Carbon Steel Hook U.S.A. Trademark, Registration #2,108,103.***

***The following information was reproduced from a Safety Engineering New Bulletin issued by Sandia National Laboratory, Albuquerque, New Mexico. Contact person for this information is Betty Fleming, SNL.***

- ***DOE-STD-1099-99, 15.1 Shackles states, "Shackles shall meet or exceed the requirements of Federal standard RR-C-271D. Each shackle body shall be permanently and legibly marked in raised or stamped letters on the side of the bow and shall be used to show:***
    - ***Manufacturer's name or trademark***
    - ***Size***
    - ***Safe Working Load (or Working Load Limit)***
- ***ASTM B30.10 Hooks, for importing requires that the manufacturer's identification be forged, cast or die-stamped on a low stress or non-wearing area of the hook***

# APPENDIX C

## SUSPECT/COUNTERFEIT ITEMS (S/CI) FOUND AT DOE FACILITIES

The following photographs include suspect/counterfeit items and documentation found at Department of Energy facilities. Many of the examples present good quality items to view against the problematic items. This set of photographs is an update to the January 2001 document, "Suspect/Counterfeit Items Identified at DOE Facilities" located at https://info.eh.doe.gov/sci/refdocs/ in the reference document area of the Office of Corporate Performance Assessment Suspect/Counterfeit-Defective Items website.

DOE facilities are encouraged to forward photographs of new S/CI via e-mail to rick.green@eh.doe.gov. This will help assist in future updates of this photographic inventory.

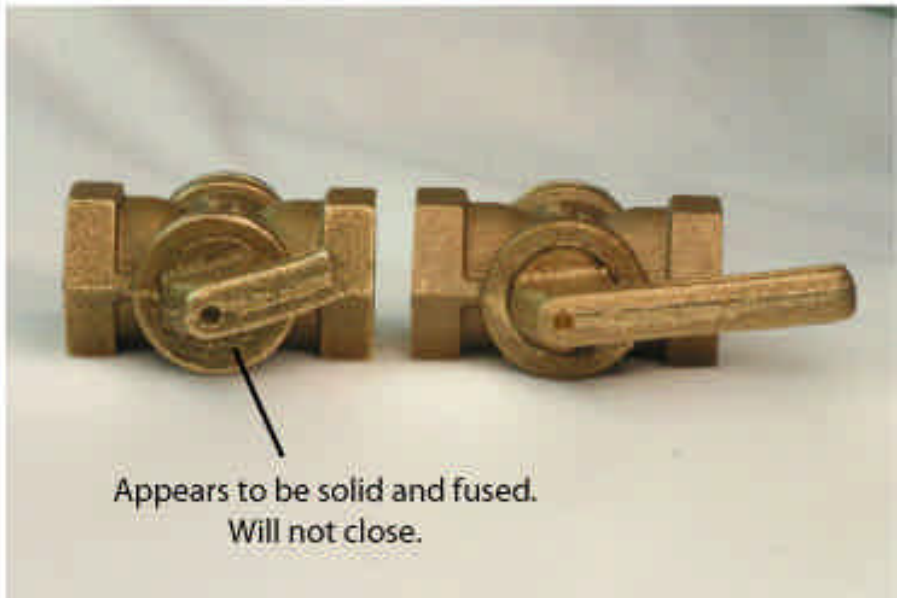
**Comparison of 1/2" Lever Handle with check low pressure gas valve- Plug style**

Left- Counterfeit
Markup similar to McDonald

Right- Good
A.Y. McDonald


Left- Counterfeit

Right- Good



**1/2" Forged CSA Ball Gas Valve- Good**

UL logo
(Underwriter's
Laboratory)

CSA logo
(Canadian
Standards
Association)

**1/2" Forged CSA Ball Gas Valve**
**Good**

Top View

McDonald Logo

**Comparison between two 1/2" Forged CSA Ball Gas Valve**

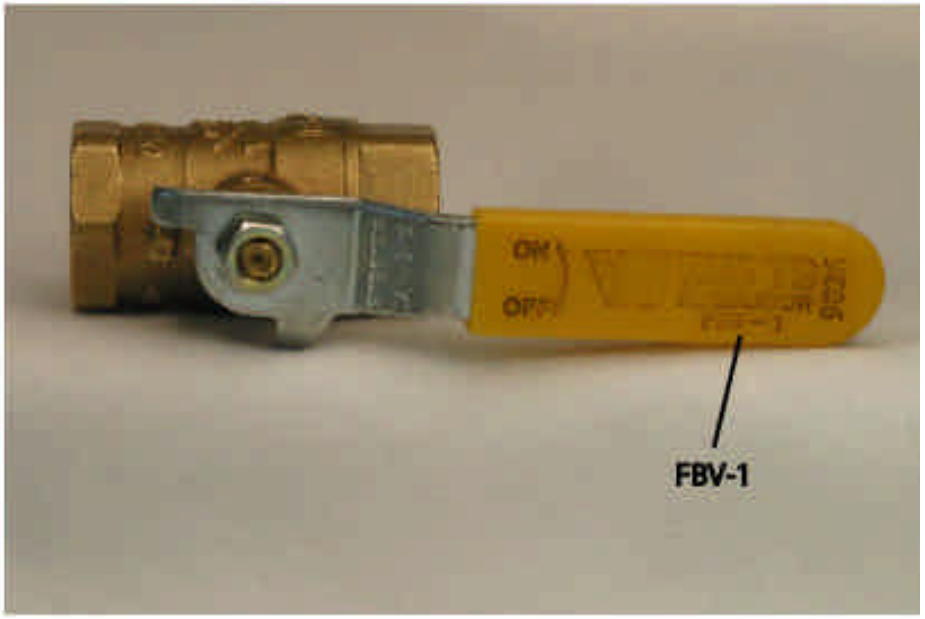
Left- Counterfeit

Right- Good

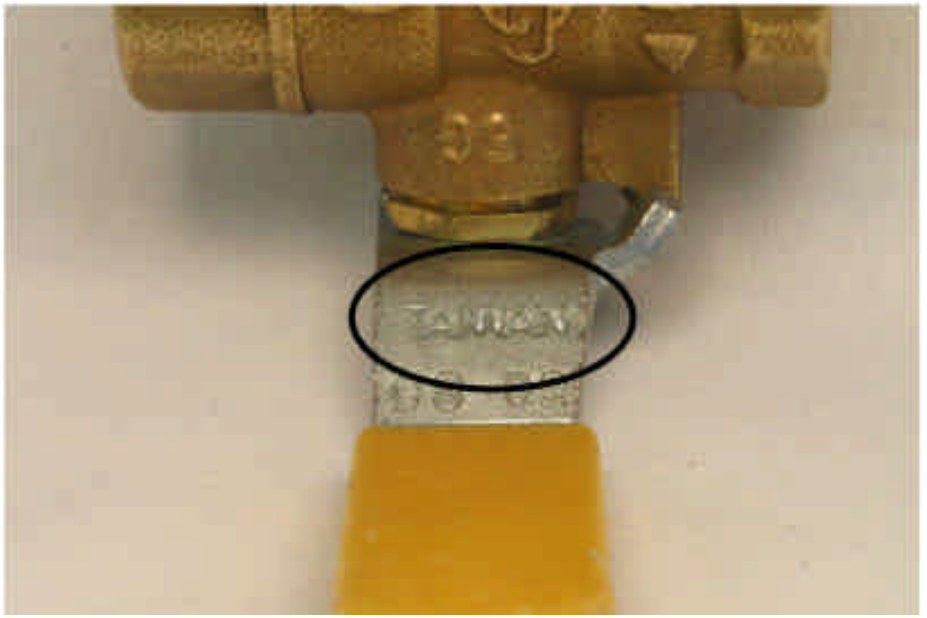
Conflicting information
1/2 PSI - 600 WOG

**1/2" Forged Ball Gas Valves**
**Counterfeit**

Handle marked Watts Regulator, FBV-1.
Watts doesn't manufacture a FBV-1 series valve.




Taiwan stamped on the back of handle.
Watts doesn't have a facility in Taiwan.

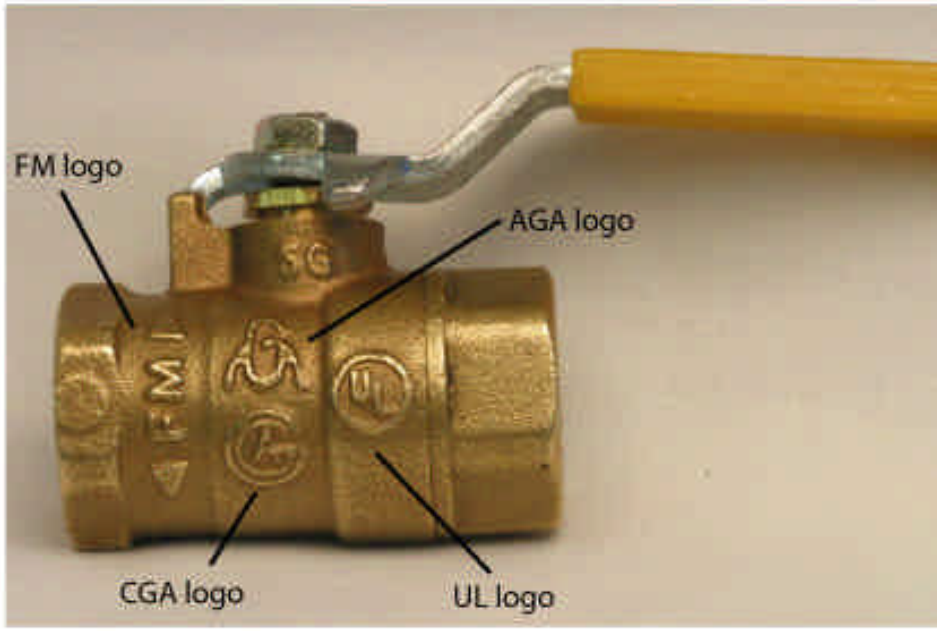


**1/2" Forged Ball Gas Valves**
**Counterfeits**

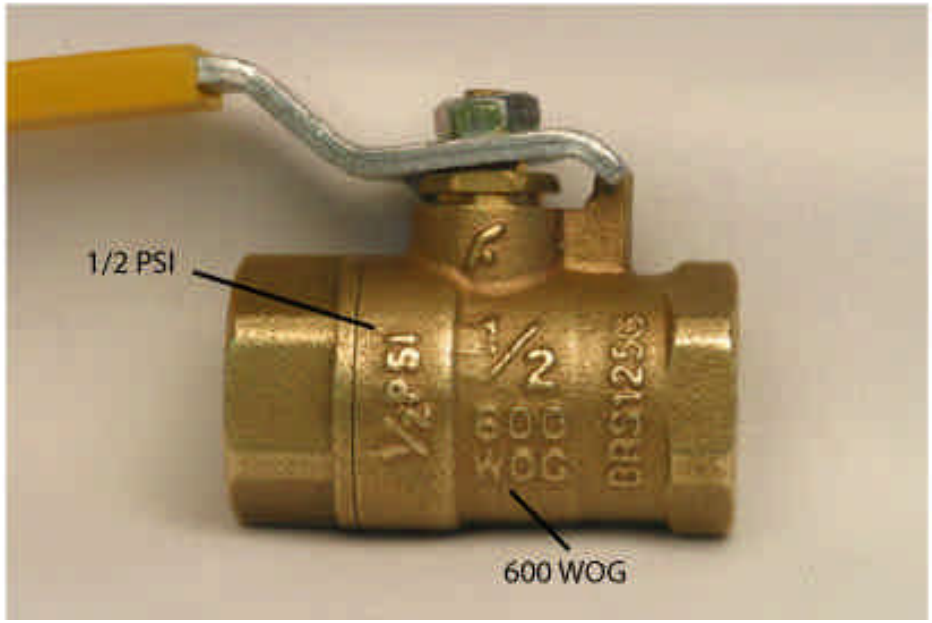
Four logos:

- -FM (Factory Mutual)
- -AGA (American Gas Association)
- -CGA (Canadian Gas Association)
- -UL (Underwriters Laboratory)

Watts only manufactures to UL & CGA




1/2 PSI and 600 WOG markings



**Comparison of two 1" Lever Handle with check low pressure gas valves- Plug style**

Left- Counterfeit
Will not close; appears fused.

Right- Good

Comparison of markings

Left- Counterfeit
CII (Coalition of Indian Industries) marking

Right- Good
McDonald marking

**Comparison of three valves**
**All foreign by Indicators on valves**
**Top- Good**
**Middle- Counterfeit**
**Bottom- Good**

McDonald manufacturer
Clear manufacturer per standards

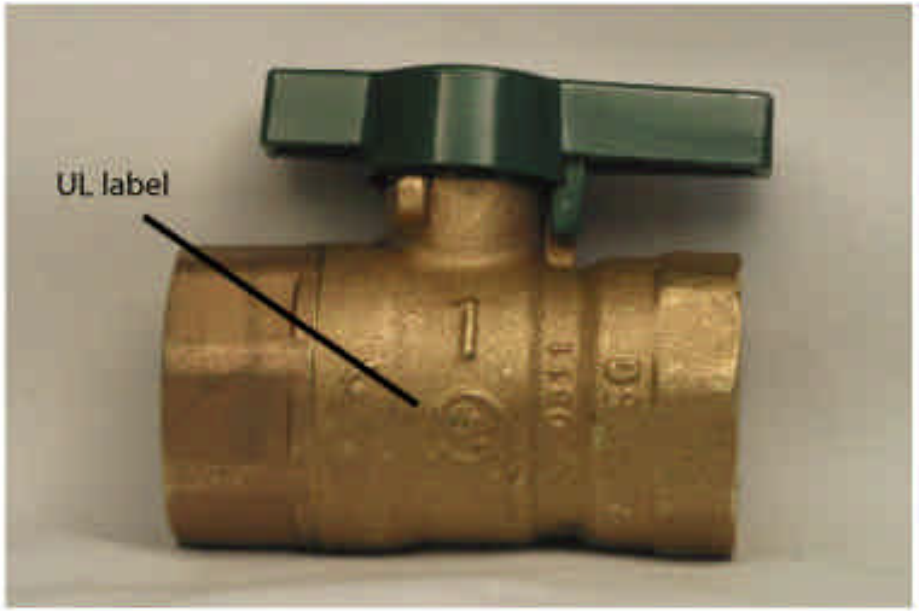

Unknown manufacturer

McDonald manufacturer
Clear manufacturer per standards

**1" Forged Ball Gas Valve**
**Good**

McDonald valve manufactured in Italy.

**1" Forged Ball Gas Valve**
**Good**




McDonald valve manufactured in Taiwan.
UL (Underwriter's Laboratory) label marking
Refer to page 36 for comparison

McDonald valve manufactured in Taiwan.
opposite side view
Refer to page 36 for comparison

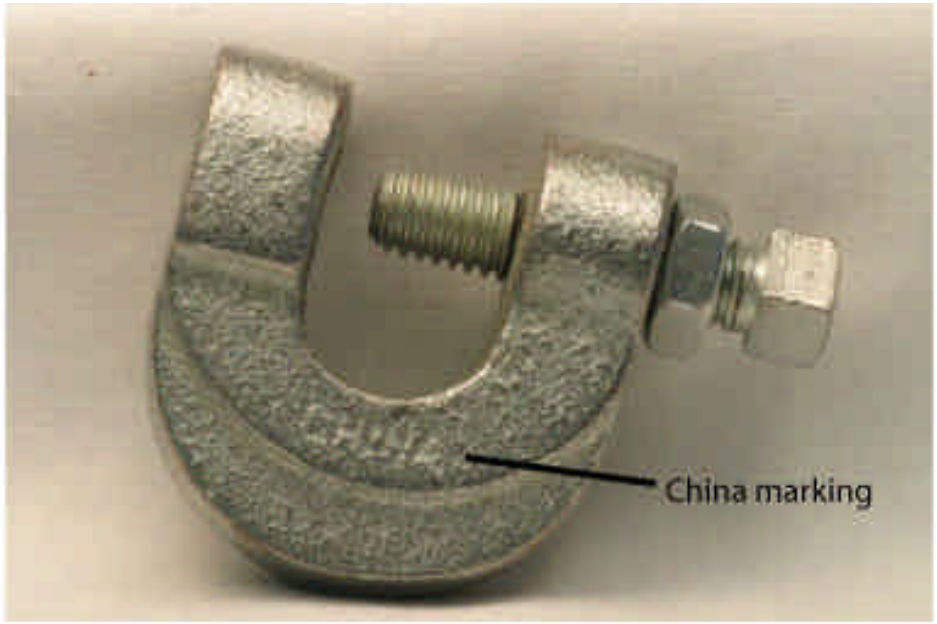
**1" Forged Ball Gas Valve**
**Counterfeit**


Unknown manufacturer
1/2 PSI marking
Represented as new
No manufacturer marking
Refer to page 36 for comparison

Unknown manufacturer
Opposite side view
Refer to page 36 for comparison

**Zinc Coated Beam Clamp**
**Counterfeit**

Product ordered domestic.
Label on box indicated domestic.
All products inside marked with "China."
No manufacturing name or logo on part.
Supplied by a B-Line distributor.



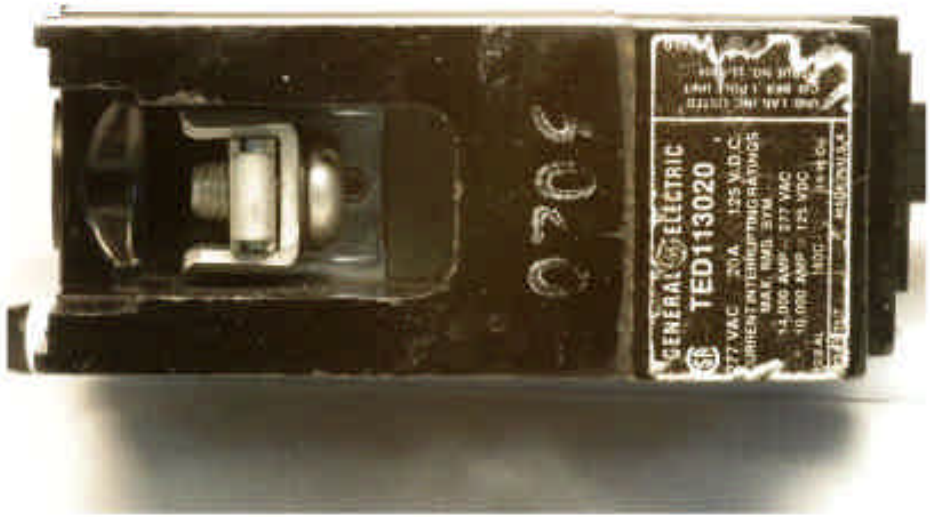

**Beam Clamp**
**Counterfeit**

No manufacturing name or logo on part.
No part number or size.

**GE Molded Case Circuit Breaker**
**Counterfeit**

End view

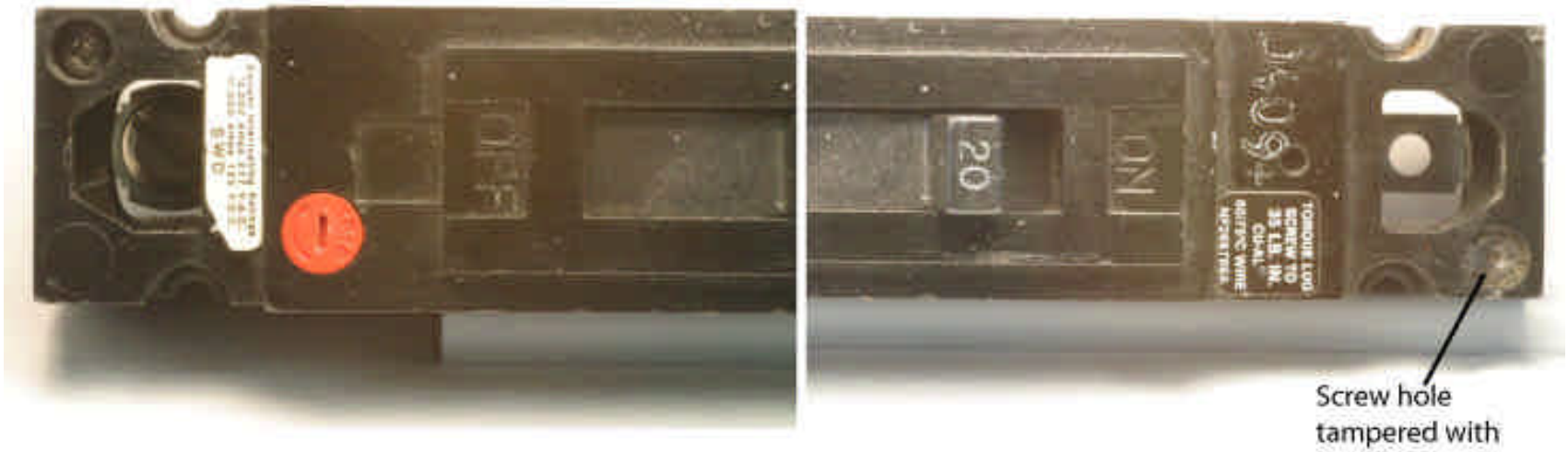
Label marked General Electric and "GE". Manufacturer stopped marking with both indicators over 20 years ago. Label very worn.




Top view

Represented as being new in condition shown.

**GE Molded Case Circuit Breaker**
**Counterfeit**




Sold as new by supplier.
Indications of being used or refurbished.
Label worn and torn.

Potting material in bottom screw hole tampered with,
should be smooth and even with surface of case.
Appears dirty and worn.
Represented as being new in the condition above.

## Comparison of two Latching Eye Hooks
## Both Counterfeit

Note: If you order carbon steel hooks, not specifying Crosby, and receive red carbon steel hooks that are not made by Crosby, absent testing on the carbon steel hooks to ensure specifications are met, consider the hook suspect. Relevant staff conducting S/CI activities at the site should then contact the Crosby Group, Inc. to determine if the manufacturer has been licensed to manufacture red carbon steel hooks. If so licensed, do not consider the hook suspect due solely to the RED color. If they have not been so licensed, Crosby has thus been informed and can deal with the legal implications of trademark infringement. Further, physical condition of the hooks should be evaluated and markings should be verified to determine authenticity. If the physical condition or markings are improper, consider the hooks suspect and potentially counterfeit. The hooks should then be tested to determine if they meet specifications. If the hooks do not meet specifications, consider the hook counterfeit and do not return to the source from which it was purchased.

Represented as being new in condition show above.
Appearance very worn.
Is correct manufacturer markings for orange hook.

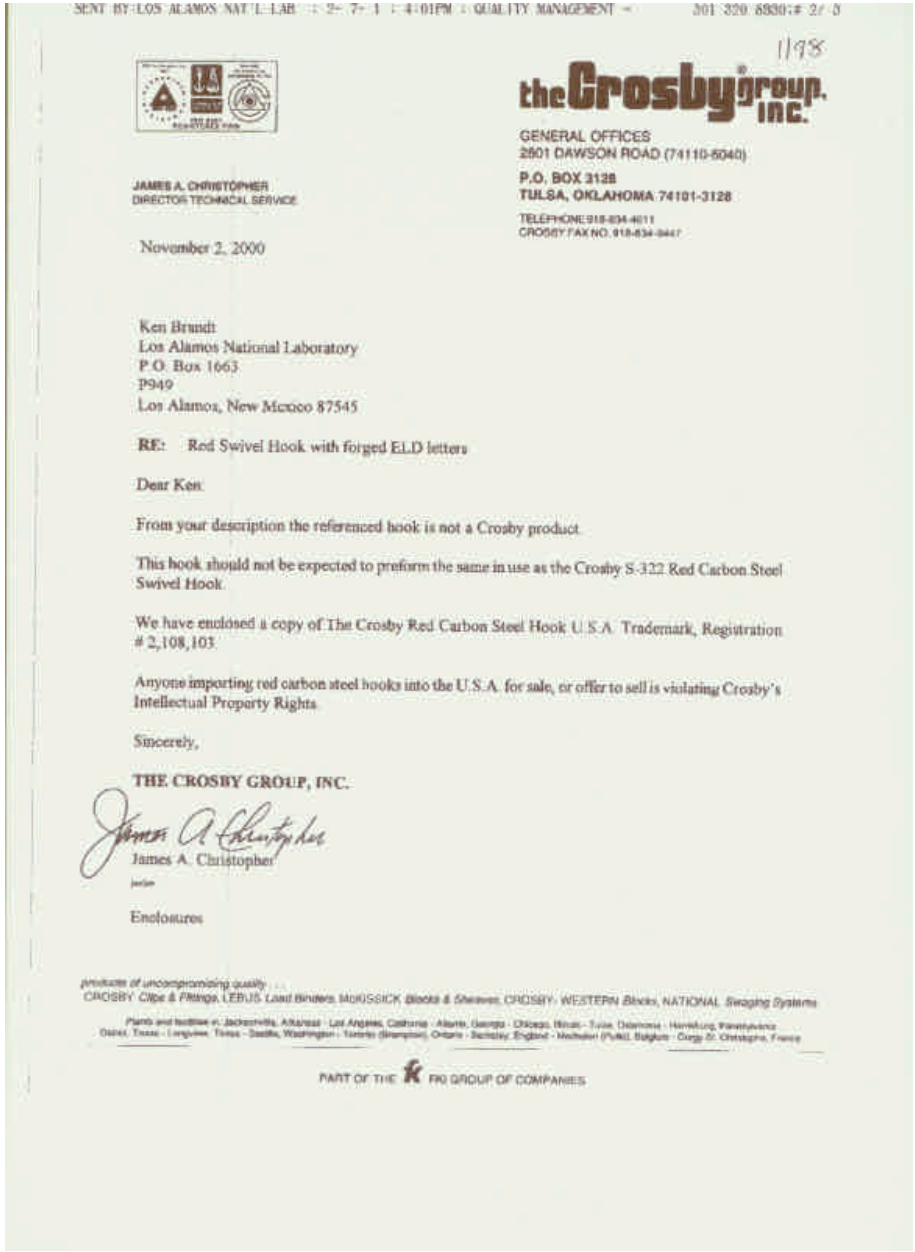
Red color is Crosby Group Inc. trademark - patented color.
Represented as being new in condition shown above.
Appearance very worn.

**Swivel Hook - Red**
**Counterfeit**

See note on page 42.

Color of hook is RED. Crosby Group Inc. has the patent, trademark registration for the color RED in the United States.


Hook received from Crosby distributor and represented as being Crosby. Marking on hook "ELD" not "CG" or "Crosby" - Crosby markings.



SENT BY:LOS ALAMOS NAT'L LAB : 2- 7- 1 : 4:01PM : QUALITY MANAGEMENT - 301 320 8830:# 2/ 3

1198

the Crosby group, inc.

GENERAL OFFICES
2801 DAWSON ROAD (74110-5040)
P.O. BOX 3128
TULSA, OKLAHOMA 74101-3128
TELEPHONE 918-834-4611
CROSBY FAX NO. 918-834-8447

JAMES A. CHRISTOPHER
DIRECTOR TECHNICAL SERVICE

November 2, 2000

Ken Brundt
Los Alamos National Laboratory
P.O. Box 1663
P949
Los Alamos, New Mexico 87545

**RE:** Red Swivel Hook with forged ELD letters

Dear Ken:

From your description the referenced hook is not a Crosby product.

This hook should not be expected to preform the same in use as the Crosby S-322 Red Carbon Steel Swivel Hook.

We have enclosed a copy of The Crosby Red Carbon Steel Hook U.S.A. Trademark, Registration # 2,108,103.

Anyone importing red carbon steel hooks into the U.S.A. for sale, or offer to sell is violating Crosby's Intellectual Property Rights.

Sincerely,

**THE CROSBY GROUP, INC.**

James A. Christopher

jwlw

Enclosures

products of uncompromising quality . . .
CROSBY Clips & Fittings, LEBUS Lead Binders, McKISSICK Blocks & Sheaves, CROSBY-WESTERN Blocks, NATIONAL Swaging Systems

Plants and facilities in Jacksonville, Arkansas - Los Angeles, California - Atlanta, Georgia - Chicago, Illinois - Tulsa, Oklahoma - Harrisburg, Pennsylvania - Odessa, Texas - Longview, Texas - Seattle, Washington - Toronto (Brampton), Ontario - Berkeley, England - Mechelen (Putte), Belgium - Clugny-St. Christophe, France

PART OF THE FKI GROUP OF COMPANIES

See note on page 42.

Int. Cl.: 6

Prior U.S. Cls.: 2, 12, 13, 14, 23, 25 and 50

**United States Patent and Trademark Office**

Reg. No. 2,108,103

Registered Oct. 28, 1997

**TRADEMARK**
**PRINCIPAL REGISTER**

CROSBY GROUP, INC., THE (DELAWARE CORPORATION)
2801 DAWSON ROAD
TULSA, OK 74110-5128

FOR: EYE HOOKS, SWIVEL HOOKS, GRAB HOOKS AND SLIP HOOKS, ALL MADE OF CARBON STEEL, IN CLASS 6 (U.S. CLS. 2, 12, 13, 14, 23, 25 AND 50).

FIRST USE 4-0-1960; IN COMMERCE 4-0-1960.

OWNER OF U.S. REG. NOS. 156,609 AND 1,822,312.

THE DRAWING IS LINED FOR THE COLOR RED.

THE MARK CONSISTS OF THE COLOR RED USED TO COVER THE GOODS. THE PORTION OF THE DRAWING SHOWN IN BROKEN LINES IS TO SHOW THE POSITIONING OF THE MARK AND NO CLAIM IS MADE TO THE DESIGN OF THE GOODS.

SEC. 2(F).

SER. NO. 74-628,866, FILED 2-2-1995.

TERESA M. RUPP, EXAMINING ATTORNEY

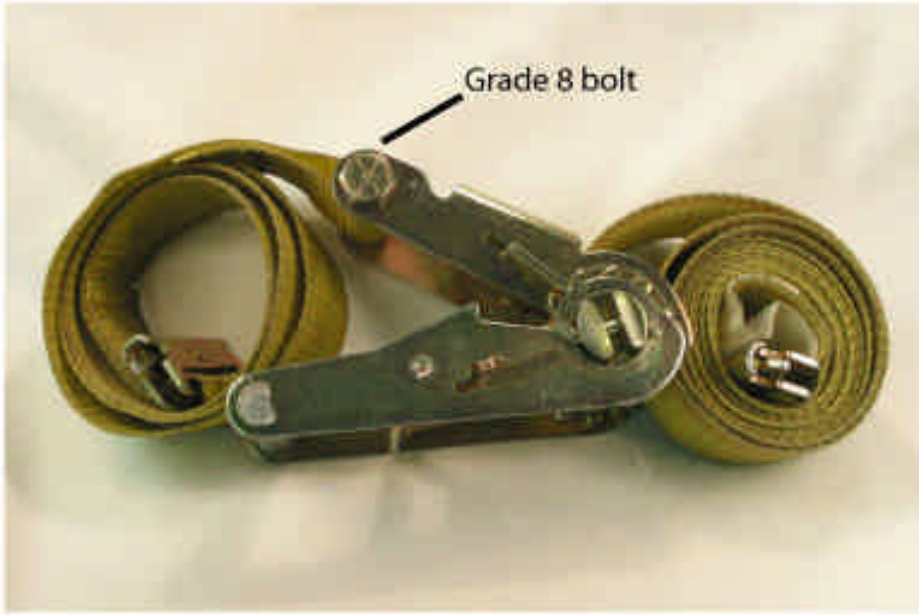
See note on page 42.

**Ratchet tie-down without strap**
**Counterfeit**


Bolt in rachet is a Grade 8 with no manufacturer marking, which is on the DOE Suspect/Counterfeit Head mark list.

Close-up of Grade 8 bolt.

**Rachet Strap Tie-Down Counterfeit**




Bolt in rachet is Grade 8 with a manufacturer marking of "H," which is on the DOE Suspect/Counterfeit Head Mark List.

Close-up of Grade 8 bolt.

**Shackle**
**Counterfeit**

No manufacturer markings.
"China" is marked, however this is unacceptable as standard requires the manufacture's name or trademark.

**Spring Clip**
**Counterfeit**

Bottom view

No manufacturer's name or logo on part.
No part numbers or size.

Side view

No manufacturer's name or logo on part.
No part numbers or size.

**Square Washers/Spacers**

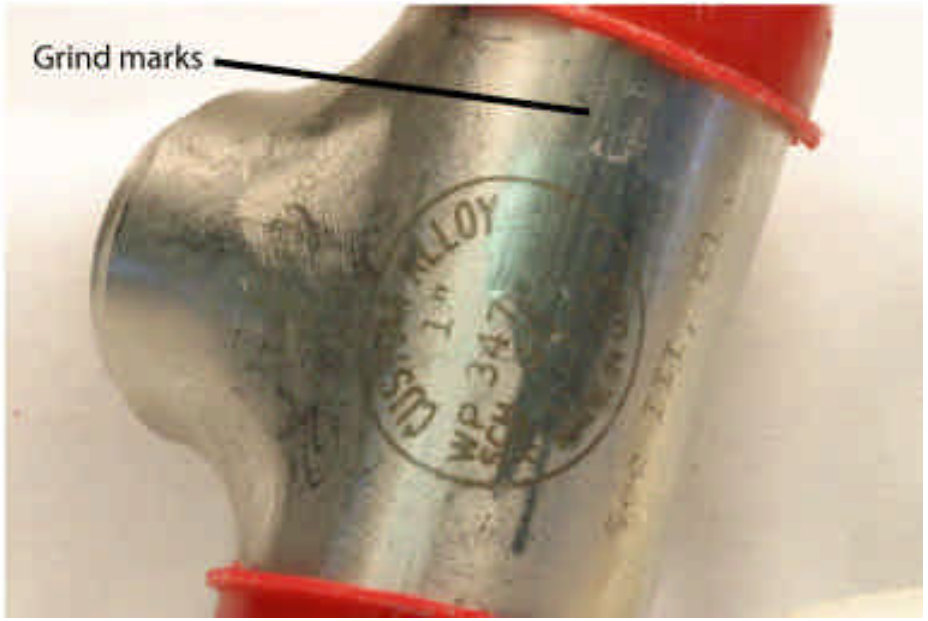
Received in the same box together.

Left- Has proper markings. Good.

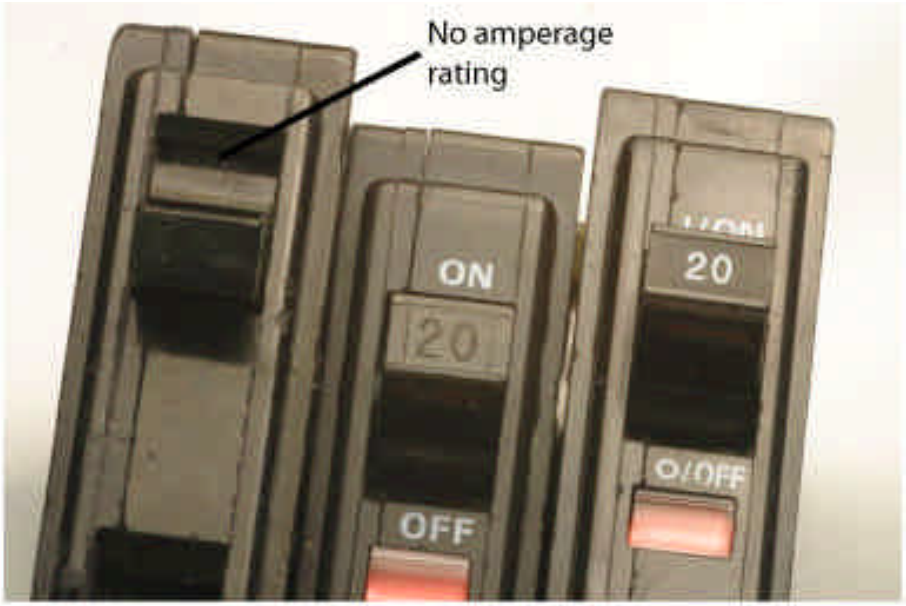
Right- Has no markings. Unkown manufacturer.


**Stainless Steel "T" Weldalet Counterfeit**

Grind marks where information was removed.
New information stamped on.



**Comparisons of Square D Breakers**




Left- Counterfeit

No amperage rating on end of switch.
Original number filed off.

Middle & Right- Good

20 amp rating clearly displayed.

**Square D Breakers**
**Both Good**


Clearly marked amperage rating on end of switch.

-Rating on top switch is silk screened.
(Square D started silk screen process in 2000.)
-Rating on bottom switch is molded.

## Square D Circuit Breakers

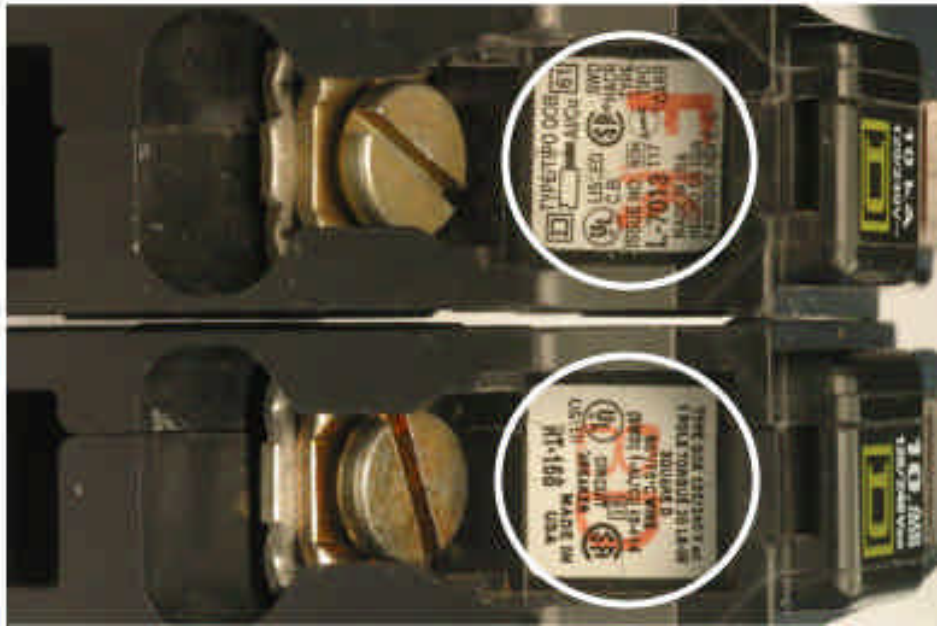
Counterfeit

Copied UL label taped on side of breaker.

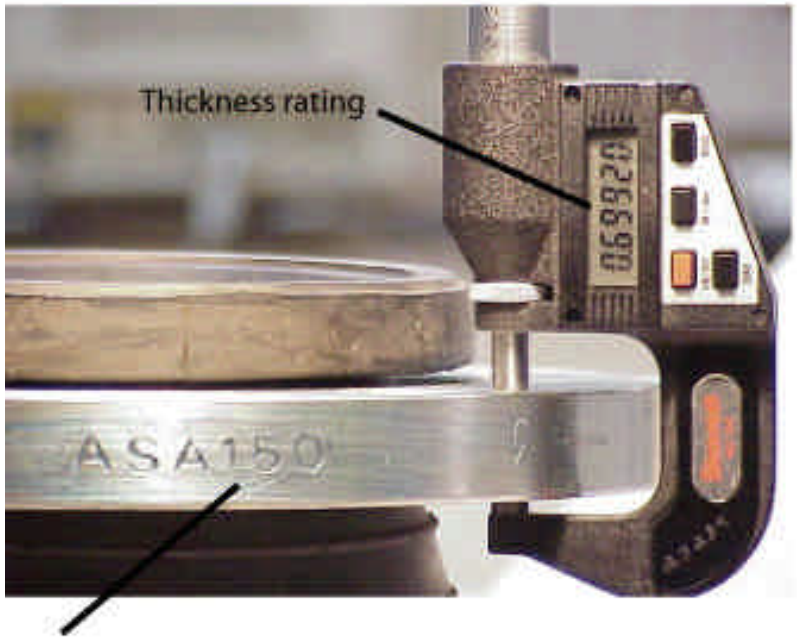

Good Breakers

-"UL" label on end of switch (black lettering on white background- two larger pinkish red letters stamped on label).

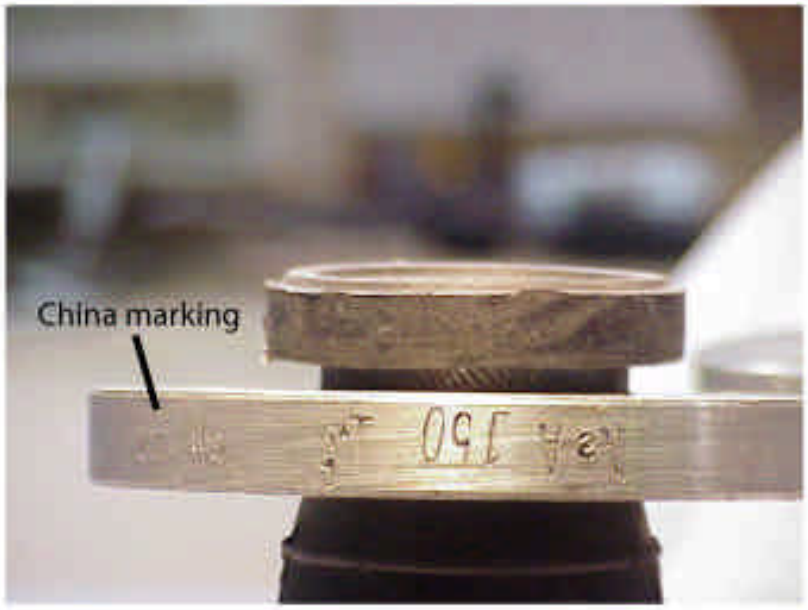
-Manufacturer can identify date period manufactured from two larger letters.



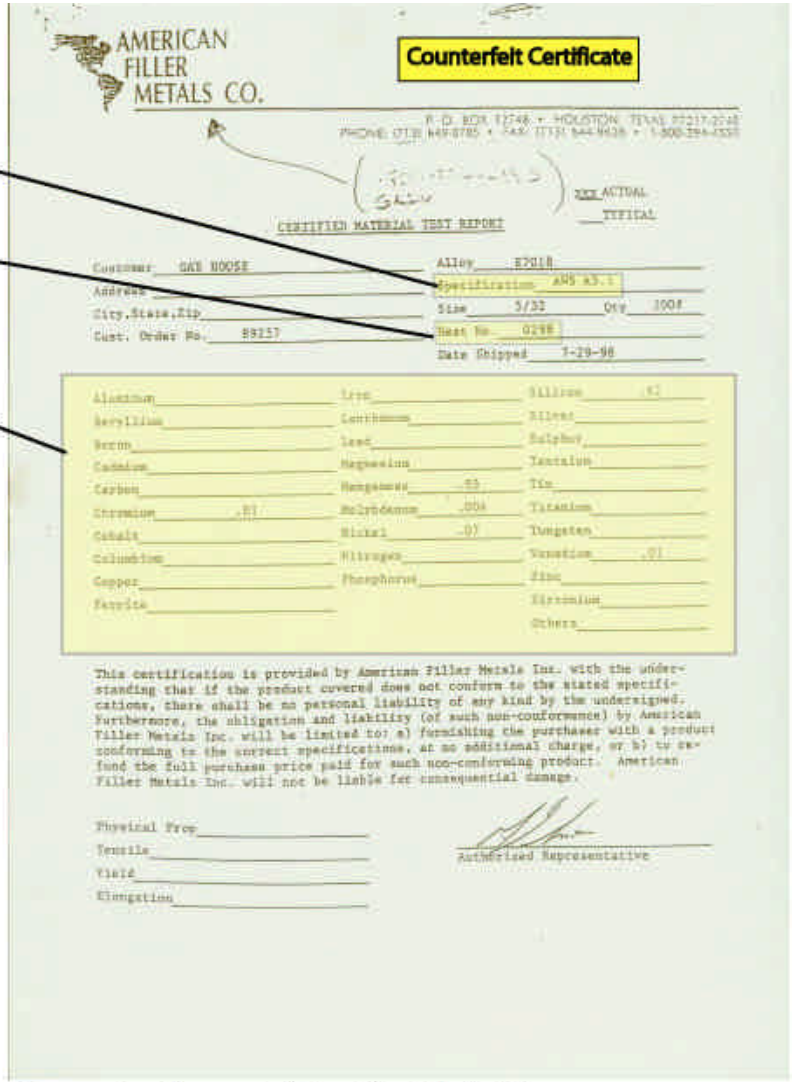
**Expansion Connectors**
**Counterfeit**




150 lb. rated flange
Should be 0.940" thick - 0.000+0.125
This one is 0.69920" thick.

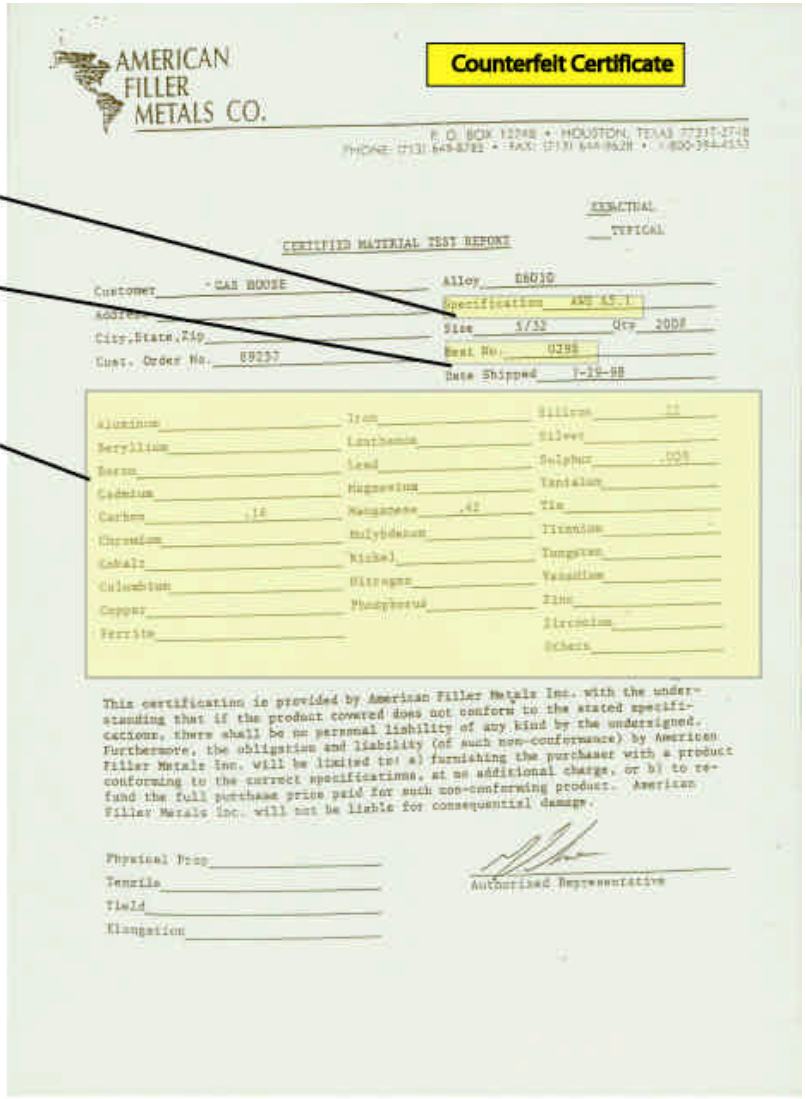



Apparent hand stamped.
No manufacturer marking. "China" unacceptable as manufacturer. No STANDARD MARKING (i.e. B 16.5).
No material type identified.




Compare to other counterfeit certificate for E6010.

1. Specification numbers are the same on both certificates.
2. Heat numbers are the same on both certificates.
3. Total of chemichal alloys should be between 99% and 100%. (Report totals 164.4% - Max capable is 100%.)



AMERICAN FILLER METALS CO.

**Counterfeit Certificate**

P. O. BOX 12848 • HOUSTON, TEXAS 77217-2748
PHONE: (713) 649-8783 • FAX: (713) 644-8628 • 1-800-364-4153

EXACTUAL
TYPICAL

CERTIFIED MATERIAL TEST REPORT

Customer - GAS HOUSE
Address
City,State,Zip
Cust. Order No. 69237

Alloy E8010
Specification AWS A5.1
Size 5/32 Qty 2000
Heat No. 0298
Date Shipped 7-29-98

| | | | | | |
|---|---|---|---|---|---|
| Aluminum | | Iron | | Silicon | .22 |
| Beryllium | | Lanthanum | | Silver | |
| Boron | | Lead | | Sulphur | .005 |
| Cadmium | | Magnesium | | Tantalum | |
| Carbon | .16 | Manganese | .62 | Tin | |
| Chromium | | Molybdenum | | Titanium | |
| Cobalt | | Nickel | | Tungsten | |
| Columbium | | Nitrogen | | Vanadium | |
| Copper | | Phosphorus | | Zinc | |
| Ferrite | | | | Zirconium | |
| | | | | Others | |

This certification is provided by American Filler Metals Inc. with the understanding that if the product covered does not conform to the stated specifications, there shall be no personal liability of any kind by the undersigned. Furthermore, the obligation and liability (of such non-conformance) by American Filler Metals Inc. will be limited to: a) furnishing the purchaser with a product conforming to the correct specifications, at no additional charge, or b) to refund the full purchase price paid for such non-conforming product. American Filler Metals Inc. will not be liable for consequential damage.

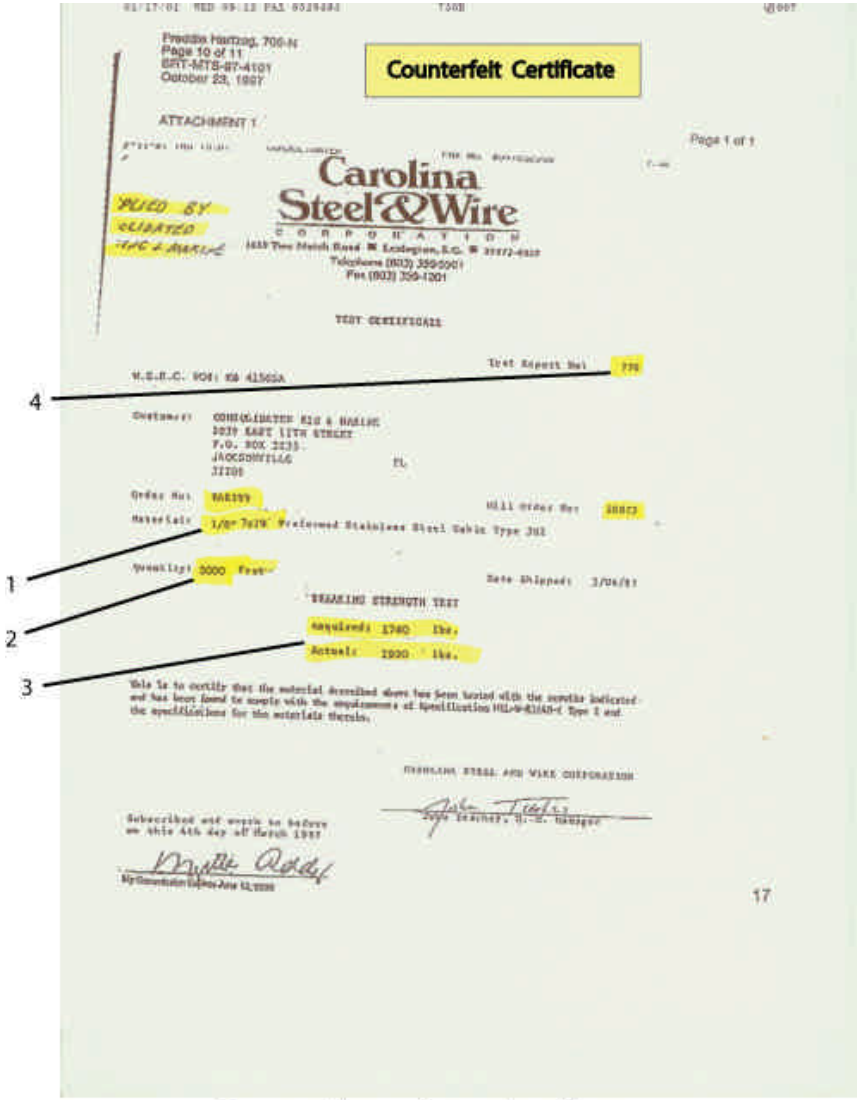
Physical Prop
Tensile
Yield
Elongation

Authorized Representative

1
2
3

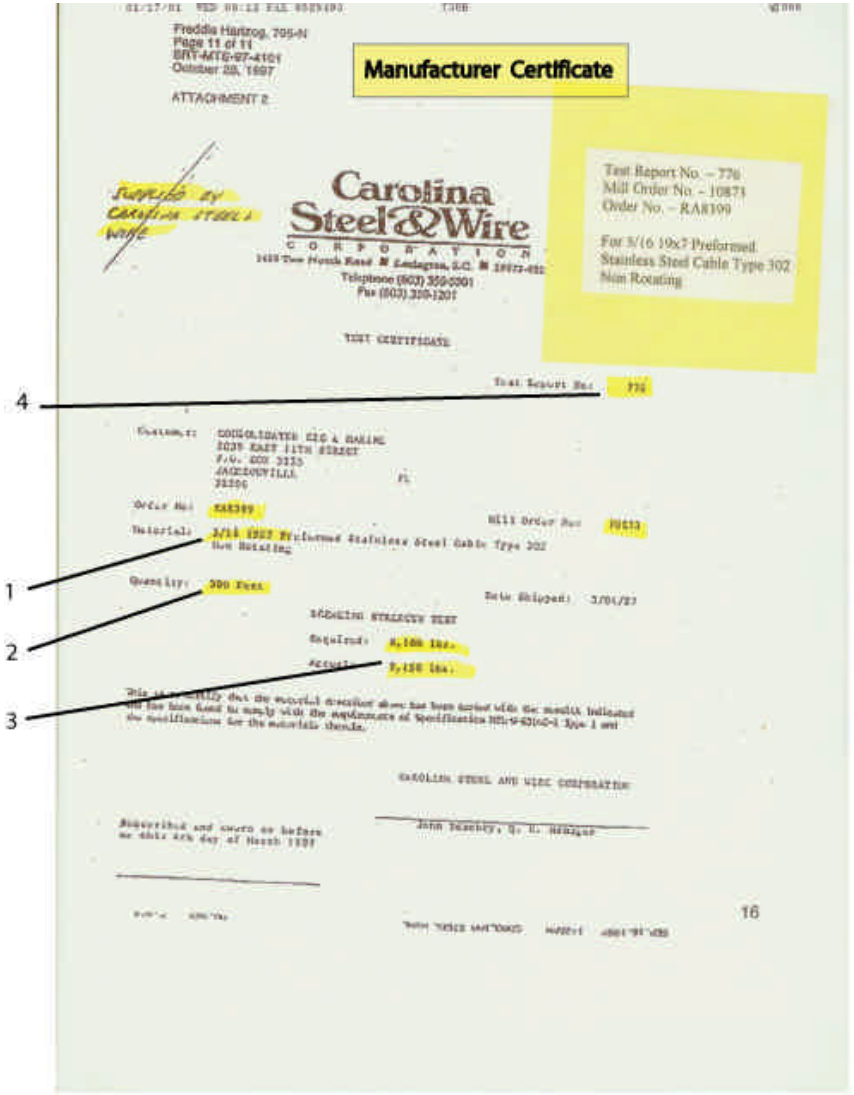
Compare to other counterfeit certificate for E7018.

1. Specification numbers are the same on both certificates.
2. Heat numbers are the same on both certificates.
3. Total of chemical alloys should be between 99% and 100%. (Report totals 76.9%. What alloys are in the remaining 23.1%?)




Compare with manufacturer's certificate.

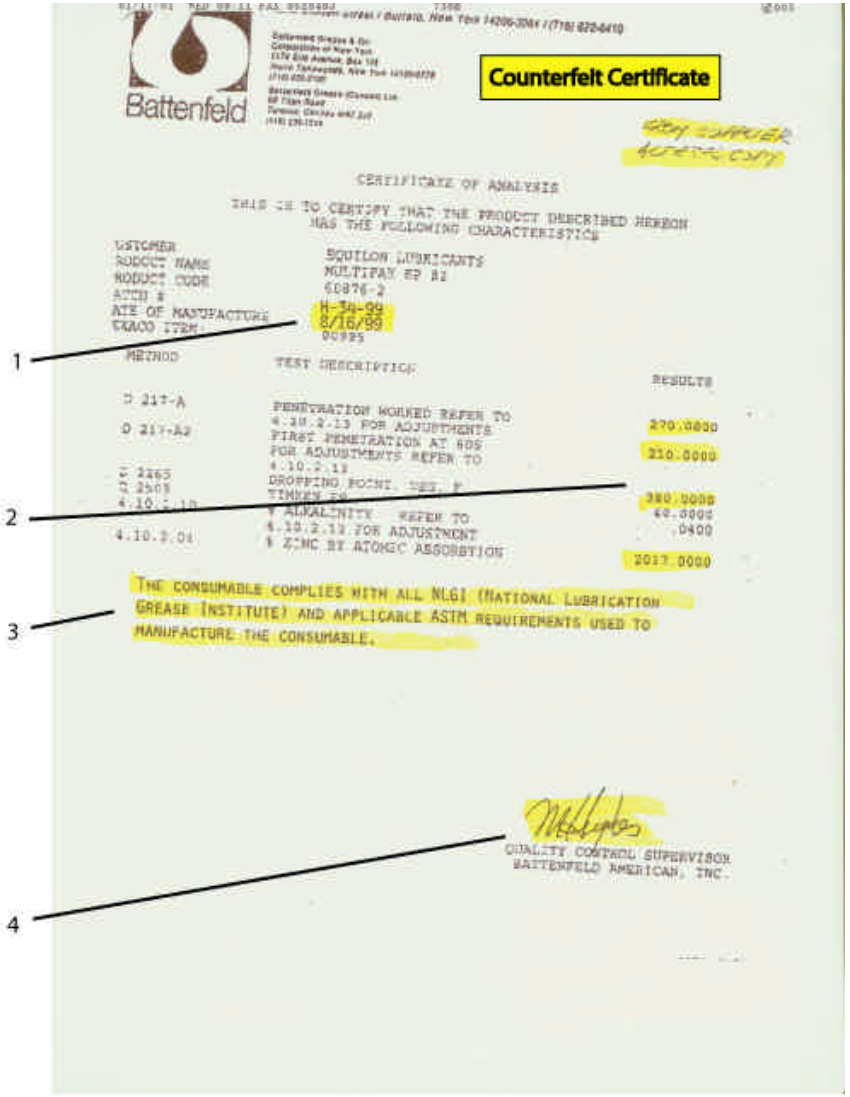
1. Material size altered
2. Quantity altered
3. Breaking strength altered
4. Same test report number




Original- same font throughout.

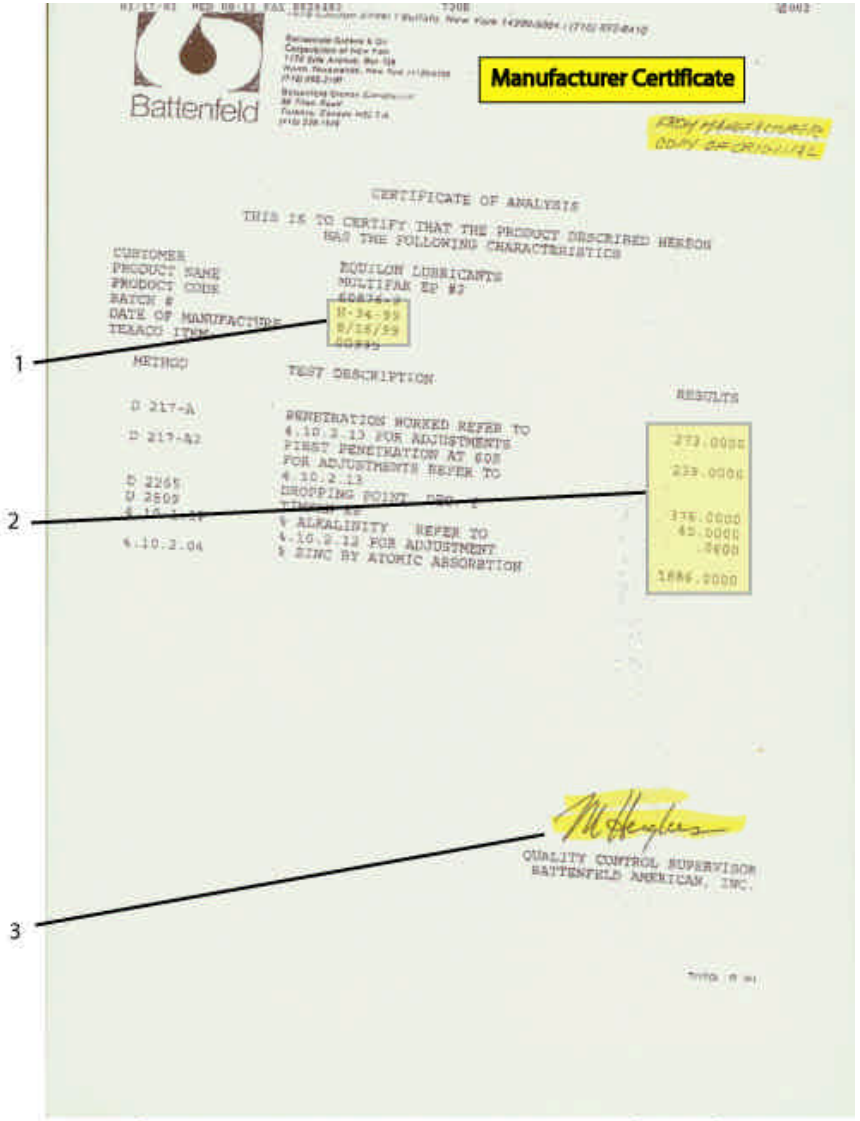
Compare with information on counterfeit certificate.

1. Material size altered
2. Quantity altered
3. Breaking strength altered
4. Same test report number




Compare to manufacturer's certificate.

1. Info- different font
2. Results altered
3. Added information not on original.
4. Signature forged.




Original-

Same font throughout.

Original signature.

Compare to counterfeit certificate.

1. Info- different font
2. Results altered
3. Signature forged.

## APPENDIX D

## REFERENCES

Current and draft directives and accompanying guidance relevant to S/CI can be found at **http://www.directives.doe.gov/.**

DOE O 414.1A, Quality Assurance - Revisions to this order are expected to be issued in spring 2004

DOE M 414.1-2(X), Quality Assurance (QA) Management System Guide

DOE O 231.1A, Environment and Health Reporting. (8-19-03)

DOE M 231.1-2, Occurrence Reporting and Processing of Operations Information (8-19-03)

DOE G 440.1-6 (To be cancelled), Implementation Guide For Use With Suspect/Counterfeit Items Requirements of DOE O 440.1, Worker Protection Management; 10 CFR 830.120; and DOE 5700.6C, Quality Assurance

An Independent Oversight Special Study of The Department of Energy's Management of Suspect/Counterfeit Items, August 2003.

Analysis and Trending of Suspect/Counterfeit Items at Department of Energy Facilities, August 2003

American National Standards Institute
11 W. 42nd Street
New York, Hew York 10036

American Society for Testing and Materials
1916 Race Street
Philadelphia, Pennsylvania 19103-1187

American Society of Mechanical Engineers
United Engineering Center
345 E. 47th Street
New York, New York 10017

DOE Office of Environmental, Safety and Health
Office of Corporate Performance Assessment, EH-3
DOE Germantown
19901 Germantown Road
Germantown, Maryland 20874

Industrial Fasteners Institute
East Ohio Building
1717 East Ninth street, #1105
Cleveland, Ohio 44114-2879

Government-Industry Data Exchange Program
Operations Center
P.O. Box 8000
Corona, California 91718-8000

Society of Automotive Engineers
400 Commonwealth Drive
Warrendale, Pennsylvania 15096-0001

Underwriters Laboratory
1655 Scott Boulevard
Santa Clara, California 95050

United States Department of Commerce
National Institute of Standards and Technology
Building 411
Gaithersburg, Maryland 20899

United States Nuclear Regulatory Commission
Washington, D.C. 20555